

**AMENDMENTS TO THE CLAIMS**

1. (Currently Amended) An inter-network connection system comprising: IP layer switching means for switching an arrival frame to a predetermined route according to an IP table in which a physical transmission path and a logical channel corresponding to an IP address are recorded; and MAC layer switching means for switching an arrival frame to a predetermined route according to a MAC table in which a physical transmission path and a logical channel corresponding to a MAC address are recorded, wherein a plurality of physical transmission paths are arranged between the IP layer switching means and the MAC layer switching means, the IP table includes means for, each time a frame from the MAC layer switching means arrives, updating self-table contents according to the IP address of the frame and the information of a physical transmission path and a logical channel through which the frame passes, the MAC table includes means for, each time a frame from the IP layer switching means arrives, updating self-table contents according to the MAC address of the frame and the information of a physical transmission path and a logical channel through which the frame passes, means for detecting fault generation of the plurality of physical transmission paths is arranged, and means for updating the IP table such that a physical transmission path in which a fault is detected according to the detection result is bypassed ~~is arranged~~.

2. (Original) An inter-network connection system according to claim 1, wherein the IP layer switching means includes means for transmitting normality acknowledge signals passing through the plurality of physical transmission paths to the MAC layer switching means, the MAC layer switching means includes means for transmitting response signals of the normality acknowledge signals through physical transmission paths at which the corresponding normality acknowledge signals arrive, and the means for detecting fault generation includes

means for checking the normality of the physical transmission path depending on the presence/absence of the response signal.

3. (Currently Amended) An inter-network connection system comprising: IP layer switching means for switching an arrival frame to a predetermined route according to an IP table in which a physical transmission path and a logical channel corresponding to an IP address are recorded; and MAC layer switching means for switching an arrival frame to a predetermined route according to a MAC table in which a physical transmission path and a logical channel corresponding to a MAC address are recorded, wherein a plurality of physical transmission paths are arranged between the IP layer switching means and the MAC layer switching means, the IP table includes means for, each time a frame from the MAC layer switching means arrives, updating self-table contents according to the IP address of the frame and the information of a physical transmission path and a logical channel through which the frame passes, the MAC table includes means for, each time a frame from the IP layer switching means arrives, updating self-table contents according to the MAC address of the frame and the information of a physical transmission path and a logical channel through which the frame passes, means for measuring the traffics of the plurality of physical transmission paths is arranged, and means for updating the IP table such that a physical transmission path in which a traffic volume exceeding a threshold value is detected according to the measurement result is bypassed ~~is arranged~~.